

The Impact of Artificial Intelligence on Digital Factory

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Abstract : The method of factory making plans has changed loads, in particular, whilst it's miles approximately making plans the factory building itself. Factory making plans have the venture of designing merchandise, plants, tactics, organization, regions, and the construction of a factory. Ordinary restructuring is turning into greater essential for you to preserve the competitiveness of a manufacturing unit. Regulations in new regions, shorter lifestyle cycles of product and manufacturing era, in addition to a VUCA global (Volatility, Uncertainty, Complexity and Ambiguity) cause extra common restructuring measures inside a factory. A digital factory model is the planning foundation for rebuilding measures and turns into a critical device. Furthermore, digital building fashions are increasingly being utilized in factories to help facility management and manufacturing processes. First, exclusive styles of digital manufacturing unit fashions are investigated, and their residences and usabilityes to be used instances are analyzed. Within the scope of research are point cloud fashions, building statistics fashions, photogrammetry fashions, and those enriched with sensor information are tested. It investigated which digital fashions permit a simple integration of sensor facts and in which the variations are. In the end, viable application areas of virtual manufacturing unit models are determined by a survey, and the respective digital manufacturing facility fashions are assigned to the application areas. Ultimately, an application case from upkeep is selected and implemented with the assistance of the best virtual factory version. It is shown how a completely digitalized preservation process can be supported by a digital manufacturing facility version by offering facts. Among different functions, the virtual manufacturing facility version is used for indoor navigation, facts provision, and display of sensor statistics. In summary, the paper suggests a structuring of virtual factory fashions that concentrates on the geometric representation of a manufacturing facility building and its technical facilities. A practical application case is proven and implemented. For that reason, the systematic selection of virtual manufacturing facility models with the corresponding utility cases is evaluated.

Keywords : augmented reality, digital factory model, factory planning, restructuring digital factory model, photogrammetry, factory planning, restructuring building information modeling, digital factory model, factory planning, maintenance

Conference Title : ICIMSE 2024 : International Conference on Industrial and Manufacturing Systems Engineering

Conference Location : New York, United States

Conference Dates : October 10-11, 2024